

SARL NEWS SUNDAY 10 February 2013

You are listening to ZS6SRL, the official radio station of the South African Radio League, the national body for amateur radio in South Africa. The SARL broadcasts a news bulletin every Sunday at 08:15 CAT in Afrikaans and at 08:30 CAT in English. To listen to a web stream, visit www.sarl.org.za, click on 'Amateur Radio Today' and follow the links for details. For audio via Echolink, connect to ZS0JPL-R.

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Your newsreader this morning is (name), (call sign), on 145,725 from Pretoria, with relays on 7,066 MHz and 3,695 MHz SSB. (Other news readers change to suit).

IN THE NEWS TODAY:

WHERE HAVE ALL THE YOUNG RADIO AMATEURS GONE?

FIRST SMARTPHONE BASED NANOSAT TO BE LAUNCHED END FEBRUARY

USA REMOVE EXPORT RESTRICTION ON SATELLITES

A QUEST FOR HIGHER POWER ON VHF

You are listening to ZS6SRL. Stay tuned for more details on these and other important and interesting items.

WHERE HAVE ALL THE YOUNG RADIO AMATEURS GONE?

Apparently there are no young radio amateurs in South Africa as last week's news item did not elicit one response! Here is the news item again:

The SARL is planning a special feature between 09:00 and 10:00 on Saturday 23 February to celebrate the 2013 Youth Sprint which will run from 10:00 - 12:00 CAT but to do this we need your voices. You need to tell us why you became and radio amateurs and how you are enjoying. Tell us what is cool about being a radio amateur?

The SARL will be making voice recordings between 13 and 16 February. Send your details and telephone number to youth@sarl.org.za and tell us which of the evenings between 20:00 and 21:00 you will be available. Club chairmen don't let your club be left out in the cold! Encourage your young members to share their passion.

FIRST SMARTPHONE BASED NANOSAT TO BE LAUNCHED END FEBRUARY

Surrey Space Technology Limited will launch the first of a series of cubesats based on smartphones at the end of January. The first one is called STRaND, the acronym for Surrey Training, Research and Nanosatellite Demonstration and

the programme is intended to be a long-term arrangement between the space company SSTL and academic researchers at the Surrey Space Centre (SSC), with STRaND-1 the first of a long line of STRaND nanosatellites.

The SSTL employees and SSC researchers involved with the STRaND programme are all volunteers. It is a condition of the programme that volunteers from SSTL and SSC use their own, free time for STRaND activities (such as lunches and breaks). The project has no budget for staff so is entirely dependent on volunteers.

The innovative amateur radio STRaND-1 CubeSat aims to carry a NEXUS Android smartphone into space to demonstrate the feasibility of using cheap smartphone electronics to control a spacecraft. A software-based speech synthesiser will be included to pay homage to the UOSAT family of satellites OSCAR 9 and 11, that were launched in 1980 & 1982. There will be an amateur radio AX.25 packet radio downlink on 437,575 MHz using data rates of 9k6 or 19k2 bps.

USA REMOVE EXPORT RESTRICTION ON SATELLITES

In another space related story the USA Congress in late December removed restriction on export of satellites and now signed into law by President Obama has removed a restriction that has essentially shut down international cooperation for building amateur satellites in the past decade.

Under the old law, satellites and their component parts were considered to be “munitions” and their export to other countries was severely limited. This made it impossible for amateur satellite organizations in different countries to work together on major projects. For example, the last big amateur satellite, Phase 3D. It was built jointly by AMSAT groups in the U.S., Germany and other countries, but that was before the international cooperation measure was put in place. The new law restricts satellite exports only to China, North Korea and countries identified as state sponsors of terrorism, as well as those under trade embargoes. A recommendation from the Departments of State and Defense said the old law impeded the ability of American satellite builders to work with international partners. This will also open a window of opportunity for SA AMSAT to get access to launch opportunities in the US.

EXPLAINING A MYSTERY OF THE SOLAR SYSTEM

According to a team of astronomers, they now understand why particles from inside the solar system bounce off what is described as a ribbon of energy boundary and as a result, neutral atoms from that collision stream inward toward the Sun. This they say is caused by a strange band of energy that appears to wrap around the entire solar system and creates a sort of energy field that push particles inward. The ribbon of energy was first discovered by NASA’s Interstellar Boundary Explorer or IBEX mission. Since that data was radioed back to Earth, astronomers and scientists around the world have struggled to identify the source of the barrier, and explain why particles seem to be driven back

towards the sun.

Now, in a paper published in the *Astrophysical Journal*, astronomers lead by Dr. Nathan Schwadron of the University of New Hampshire have put forth the so-called retention theory that for the first time explains the key observation of the unexplained ribbon's width. The theory says that the mysterious band of energy exists in a location where neutral hydrogen atoms from the solar wind meet a local galactic magnetic field. As a result, the neutral atoms, which are not affected by magnetic fields, become charged ions and begin gyrating rapidly around magnetic field lines. The result is that these ions are aimed back toward the sun.

While the latest theory is not the first to propose a solution to the galactic puzzle, Schwadron's hypothesis provided a key point overlooked by other researchers. That being the rapid rotation creates waves or vibrations in the magnetic field, and the charged ions then become physically trapped in a region by these waves, which in turn would amplify the ion density and produce the broader ribbon seen.

The result of all this is that Schwadron's theory could provide astronomers with a better understanding of how the solar system interacts with interstellar space. It could also provide insight into the magnetic fields of the interstellar medium, which astronomers say still remain largely a mystery.

A QUEST FOR HIGHER POWER ON VHF

Last year there was a lot of excitement about the request for an increase of RF power from 400 Watt to 1 500 Watt, as already in use by radio amateurs in several other countries. This matter is currently being discussed between the SARL and ICASA.

Higher power would be most beneficial for operation on the VHF bands, such as 50 MHz and 144 MHz. Weak Tropo Scatter signals with QSB are often observed across the country throughout the day and night on these bands. Tests conducted between Cape Town station ZS1NAZ and Port Elizabeth station ZS2FM on 50 MHz have shown that a 100 Watt signal is just above the noise level, but became very readable when the power was increased to 400 Watt. Just imagine how the Tropo scatter signals will improve with another increase of four times, resulting in country-wide communications most of the time; other propagation modes would perform even better.

The 144 MHz band could benefit the most during Tropo Ducting making DX contacts possible between South Africa and Brazil and/or with Australia. High power solid state linears operate off 50 volts DC and are not lethal. Furthermore, the Great Conveyor Belt is a massive circulating current of hot plasma on the Sun and is slowing down affecting solar activity as well as F2 propagation. NASA predicts that this slowdown means that Solar Cycle 25, peaking around the year 2022, could be one of the weakest in centuries.

NEW MEMBERS

A hearty welcome to the following 4 radio amateurs who recently joined the SARL as members: Richard Whiteway - ZR6WR; Gideon Joubert - ZS6GFJ; Gerhard Gericke - ZSL1057; Richard Bigwood - ZS6BYD. We trust that you will enjoy a long and pleasant relationship with the SARL.

The SARL now has 1 684 members.

CLUB AFFILIATION

Last week 1 more club has affiliated with the SARL. We welcome the Sutherland Amateur Radio Club, ZS3OBS. This brings the total number of affiliated clubs to 34.

If you are travelling in the Sutherland/Fraserburg area listen out for a new repeater which is now operational on an experimental basis on 145,600 NARROW FM and requires an 88,5 Hz tone. Please give the Sutherland radio amateurs a call.

For a complete list of affiliated clubs go to the SARL web page and click on Club Talk.

RESULTS OF THE QRP CONTEST HELD ON THE 26TH JANUARY 2013

There were 119 participants who took part in the contest and the contest committee received 18 logs. It is a pity that more logs were not received.

12 year old Francois Reyneke, ZU6FR, took part in his first contest and did exceptionally well by coming 11th. Francois keep it up and we will see you in the next contest.

1st - ZS2PE - 546 points 2nd - ZS2ACP - 456 points 3rd - ZS4JAN - 448 points

Congratulations to the winner and many thanks to those who submitted their logs.

RAE COURSE

The East Rand Club will start with RAE classes for the May 2013 exam on the 19th of February at 18:00 at Arrowe Park, Ebenezer Street, Benoni. Those interested in attending the classes should contact Elize at 073 490 6642.

PROPAGATION REPORT

Hannes Coetzee, ZS6BZP, reports that the solar activity is expected to continue at low to very low levels. None of the currently visible sunspots are actively flaring.

If you want to do your own frequency predictions, the expected effective sunspot number for the week will be around 45.

All the bands from 20 to 10 m will provide lots of DX fun with 20 m providing the best openings with 15 m not far behind. There will also be 10 m openings on sunlit paths in the afternoons.

Please visit www.spaceweather.co.za for further information.

DIARY OF EVENTS 10 February Today, last chance to take part in the SARL National Field Day. 15 February Last day for submission of nominations for SARL awards to secretary@sarl.org.za. 23 February - SARL Youth Sprint 10:00 to 12:00 CAT with a special event starting at 09:00.

SARL News invites clubs and individuals to submit news items of interest to radio amateurs and short-wave listeners. Submit news items - if possible in both English and Afrikaans to www.sarl.org.za/newsinbox.asp, not later than the Thursday preceding the bulletin date.

The SARL also invites you to listen to Amateur Radio Today every Sunday morning at 10:00 CAT on 145,750 MHz in the Pretoria area, with relays on 7 082, 7 205 and 17 760 kHz. There is also a podcast by ZS6RO. For a web-stream and Echolink by ZS6FCS, visit www.sarl.org.za, click on 'Amateur Radio Today', go down the green column and click on 'LISTEN ON THE WEB'. A repeat transmission can be heard on Mondays at 18:30 UTC on 4 895 kHz ((A new time and frequency!)). Reception reports are invited. We are particularly interested in reports of the 4 895 kHz transmission on Mondays at 16:30 UTC as the frequency is close to the proposed new amateur allocation near 5 MHz. Reception reports from all areas in South Africa would be useful in our bid to ICASA for frequencies pilot studies. Send reports to artoday@sarl.org.za.

Sentech sponsors the transmissions on the non-amateur frequencies.

You have listened to a bulletin of the South African Radio League compiled and edited by George Honiball, ZS6NE.

Thank you for listening, 73.

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